

which flooded streams and washed away bridges, fencing, etc. Several barns were struck by lightning and with their contents were burned.

Rochester: during the storm on the 23d, the rainfall at Clyde, Wayne county, was the heaviest ever known to have fallen at that place. The sewers were not capable of carrying off the large volume of water, and for one hour the streets were flooded; several objects were struck by lightning. At Rochester very heavy rain fell from 12.10 to 12.45 p. m., 0.89 inch having fallen in that time.

Saratoga: a violent wind and rain storm passed over this part of the state on the afternoon of the 24th; many barns and other buildings were struck by lightning. Reports from Litchfield Springs state that the storm was also severe at that place and that numerous buildings were damaged by lightning.

New York City: light showers of rain fell during the afternoon of the 25th; after 9 p. m. a heavy rain began and continued, with a few short intervals, until noon of the 26th, the total rainfall during the storm being 3.63 inches. Since the establishment of this station in November, 1870, there have been only two instances of a heavier rainfall, viz: 3.80 on July 26, 1872, and 4.02 on October 4, 1882.

North Carolina.—Marion, McDonough county, 27th: the recent heavy rains caused destructive freshets in the western part of this state. Two large trestles on the Mountain Division of the Western North Carolina railroad were washed away, and the cotton and tobacco crops were badly injured. The damage caused by the storm in western North Carolina is estimated at \$200,000.

Ontario.—London: the heavy rain storm on the night of the 9–10th, caused a washout near Dorchester station on the Grand Trunk railroad, eight miles west of this city.

Hillsburg: a severe thunder storm passed over this region during the night of the 21–22d. Considerable damage was caused by washouts on the railroad. At Oxford a hotel was struck by lightning and badly damaged.

Oregon.—Lakeview: on the 9th this place was flooded by a "cloud-burst," which occurred on the mountains about one mile distant. Very heavy rain fell from 7.30 to 8 p. m.; this storm is considered to have been the severest that has occurred in this vicinity for many years.

Pennsylvania.—Harrisburg: a destructive storm, accompanied by a very heavy rainfall, occurred in the Cumberland valley during the evening of the 10th. About one-half mile of the track of the Cumberland Valley railroad east of Newville was washed away. The storm's path was about one-half mile in width and was very destructive to buildings, fences, and grain crops. In this city a severe thunder storm prevailed, during which a number of buildings were struck by lightning and two persons killed.

Curwensville, Clearfield county: a storm of great violence passed over this vicinity during the night of the 10–11th. At 1 a. m., Anderson creek, which divides the town, overflowed and flooded the low grounds. At 8 a. m. of the 11th a large dam, eight miles above the town, gave way and a large quantity of lumber was washed away. A number of small bridges west and north of here were also destroyed. At Bridgeport, one mile from Curwensville, a number of houses and barns were swept away.

Pittsburg: on the 11th the Allegheny valley was visited by one of the heaviest rain storms known for many years. A "cloud-burst" occurred in the vicinity of Brookville, and the creek at that place rose ten feet in less than two hours. The rise was so sudden that no preparation could be made for it, and the dams at several mills gave way, and lumber valued at \$75,000 was washed away. At Pittsburg the Allegheny river rose very rapidly, and a number of coal barges were swept from their moorings. Reports from New Martinsville, West Virginia, state that a violent thunder storm prevailed at that place on the night of the 11–12th. A violent thunder storm passed over portions of western Pennsylvania and eastern Ohio

on the 24th, causing much damage to property, principally by lightning. At Washington, Pennsylvania, a large planing mill was struck by lightning and burned, entailing a loss of \$20,000.

Erie: a severe thunder storm, accompanied by very heavy rain, occurred at 7 p. m. of the 23d. Numerous buildings were struck by lightning during the storm.

Reading: the storm of the 25–26th did great damage to crops throughout Berks county, especially to wheat. At Birdsborough a large part of the Schuylkill canal bank broke during the morning, and flooded many of the adjacent fields.

Lancaster, Lancaster county: the storm on the night of the 25–26th was very destructive in this county. The wheat and tobacco crops were badly damaged, and in some places entirely ruined. Traffic on the Philadelphia and Reading railroad was suspended on account of the washing away of several bridges. Many houses in Lancaster were flooded and much damage sustained.

Rhode Island.—Point Judith: a very heavy rain storm began at 5.50 p. m. of the 25th and continued until 2.35 p. m. of the 26th, during which time 5.29 inches of water fell.

Providence: much damage was done at places north of this city by the storm (low area vi.) of the 25th. At Pawtucket, five miles north, six inches of rain fell, 3.26 inches having fallen at Providence. At Central Falls the storm is reported to have been the most destructive that has occurred for many years. The rainfall was very heavy and flooded the streets and sewers. Reports from Woonsocket also state that the storm at that place was unusually severe.

Tennessee.—Chattanooga: the total rainfall for the twelve hours and thirty-five minutes, ending at 8.40 a. m. of the 7th, was 3.45 inches, which is the heaviest for that length of time that has occurred here since the opening of this station. The streets were flooded and in some places rendered impassable. On the 25th a "cloud-burst" occurred on the opposite side of the Tennessee river north of this city. Stringer's branch, a stream in that vicinity, rose to a greater height than was ever before known, and caused damage by washing away the wheat shocks along its banks.

Texas.—El Paso: on the afternoon of the 18th, a severe thunder storm passed over this station from west-southwest to east-northeast. The wind reached a velocity of thirty-seven miles per hour, causing considerable damage to buildings.

Corsicana: a storm occurred at this place on the 13th which blew the roofs from two houses and prostrated many trees.

Vermont.—Springfield, Windsor county: the heavy rains of the 9th and 10th caused a very destructive freshet at this place. All of the streets were badly washed, and the water flooded many buildings. The damage to business interests in Springfield is estimated at \$50,000. All roadways in the surrounding country were rendered impassable from washouts and landslides. The grass crop in many sections was entirely ruined and other crops under cultivation were badly damaged. This is considered the most destructive freshet that has occurred since 1869, and no accurate estimate of the damage caused can be made.

Wisconsin.—La Crosse: on the afternoon of the 21st a severe storm of wind and rain passed over this place; the rainfall amounted to 1.32 inches, nearly all of which fell in about twenty minutes.

Neillsville, Clark county: at 3 p. m. of the 24th a severe storm of wind and rain occurred in this vicinity. A dwelling, six miles east, was struck by lightning and burned; one of the occupants was killed.

NAVIGATION.

STAGE OF WATER IN RIVERS.

The Mississippi river was at its highest stage between the 1st and 12th at all stations from Saint Paul, Minnesota, to New Orleans, Louisiana, except at Cairo, Illinois, where it was highest on the 18th; the lowest stages were observed on

the 29th and 30th at all stations, except at Saint Louis and Cairo, where the highest water was noted on the 2d and 4th, respectively. The greatest monthly range in the Mississippi, eleven feet and three inches, occurred at Vicksburg.

The Missouri river reached a point three inches above the danger line at Yankton, Dakota, on the 21st.

The Cumberland river, at Nashville, Tennessee, on the 13th, rose three feet and five inches, giving a depth sufficient for steamboat navigation, which was resumed on that date; the highest stage was attained on the 15th and 16th, when there was a depth of thirteen feet and one inch above low-water mark.

In the following table are shown the danger points at the various river stations; the highest and lowest stages of June, 1884, with the dates of occurrence, and the monthly ranges.

Heights of rivers above low-water mark. June, 1884.

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.	
		Date.	Height.	Date.	Height.		
<i>Red River:</i>							
Shreveport, Louisiana.....	Fl. In.		Fl. In.		Fl. In.	Fl. In.	
Arkansas:	29 9	4	28 3	30	18 7	9	8
Little Rock, Arkansas.....	33 0	6	12 0	25, 26	7 6	4	6
Fort Smith, Arkansas.....		3	5 0	23	0 7	5	7
<i>Missouri:</i>							
Yankton, Dakota.....	20 0	21	20 3	1	10 10	9	5
Omaha, Nebraska.....	16 0	22	14 7	1	9 6	5	1
Leavenworth, Kansas.....	21 0	24, 25	17 10	1	13 6	4	4
<i>Mississippi:</i>							
Saint Paul, Minnesota.....	14 6	1	7 3	30	4 2	3	1
La Crosse, Wisconsin.....	18 0	2, 3	6 10	30	4 6	2	4
Dubuque, Iowa.....	21 10	4 10 8	9 7	30	7 10	1	9
Davenport, Iowa.....	15 0	3, 6	7 8	30	5 11	1	9
Keokuk, Iowa.....	14 6	10	7 11	30	6 6	1	5
Saint Louis, Missouri.....	40 0	10	21 8	2	16 10	4	10
Cairo, Illinois.....	34 0	18	26 11	4	20 7	6	4
Memphis, Tennessee.....	41 0	1	41 4	30	30 1	11	3
Vicksburg, Mississippi.....	41 0	1, 2	1 9	29, 30	4 4	2	7
New Orleans, Louisiana.....	2 6						
<i>Ohio:</i>							
Pittsburg, Pennsylvania.....	20 0	12	8 2	8, 9, 10	1 11	6	3
Cincinnati, Ohio.....	50 0	18	15 4	28	8 0	7	4
Louisville, Kentucky.....	24 0	20	7 3	30	5 1	2	2
<i>Cumberland:</i>							
Nashville, Tennessee.....	42 0	15, 16	13 1	5	2 11	10	2
<i>Tennessee:</i>							
Chattanooga, Tennessee.....	33 0	29	11 5	6	3 5	8	0
<i>Monongahela:</i>							
Pittsburg, Pennsylvania.....	29 0	12	8 2	8, 9, 10	1 11	6	3
<i>Savannah:</i>							
Augusta, Georgia.....		26	25 9	4, 5, 6	6 2	19	7
<i>Willamette:</i>							
Portland, Oregon.....		14, 15	20 2	2, 3	17 11	2	3
<i>Sacramento:</i>							
Red Bluff, California.....		24	4 5	30	2 7	1	10
Sacramento, California.....		1	22 0	30	19 4	2	8
<i>Mobile:</i>							
Mobile, Alabama.....		9	17 4	16, 17, 30	15 0	2	4
<i>Colorado:</i>							
Yuma, Arizona.....		26, 29	28 4	1	26 2	2	2

* Below bench mark. † Below high-water mark of 1874 and 1883.

FLOODS.

Saint Joseph, Buchanan county, Missouri: on the 23d the Missouri river at Watson, Atchison county, broke through the dike and flooded what are locally known as the "Sonora Bottoms," causing considerable damage. At Saint Joseph the river continued to rise and large quantities of drift were running.

Lexington, Missouri: the Missouri river rose rapidly at this point on the 23d; the Wabash and Saint Louis railroad tracks in portions of the Ray county bottoms were submerged, causing delay of trains.

Pittsburg, Pennsylvania, 12th: all of the tributaries of the Allegheny are much swollen; the Red Bank creek is reported to have reached the highest point known since 1865, and numerous bridges over that stream were washed away. The Allegheny river rose six feet during the twenty-four hours ending 2 p. m. of the 12th.

Union, Union county, South Carolina: at about 4.30 p. m. of the 25th, a destructive storm occurred; all streams were much swollen by the heavy rains, and crops in the bottom lands were badly damaged.

Chester, Chester county, South Carolina, 29th: the heavy rains of the past week caused great damage to crops. On

many of the farms in this county the cotton fields have been ploughed over and prepared for corn. The neighboring streams have been higher than for ten years.

Anderson, Anderson county, South Carolina: a very heavy rainfall occurred on the 26th; several bridges were washed away and great damage was done to the corn crops in the low lands.

Laurens, Laurens county, South Carolina: three bridges and several mill-dams on Robin creek were washed away during the night of the 26-27th; great damage was done to wheat, oats, cotton and corn.

Camden, Kershaw county, South Carolina: the heavy rains preceding the 28th, caused the Wateree river to overflow. In the vicinity of Prosperity, Newberry county, a large amount of damage was done to the growing crops, and several wash-outs occurred on the Greenville and Columbia railroad.

The Signal Service observer at El Paso, Texas, reports the following:

"The flood in the Rio Grande river has continued throughout June, causing heavy losses to farmers and those engaged in raising stock. The damage to the Atchison, Topeka and Santa Fé, and the Southern Pacific railroads is estimated at \$1,000,000. No mails were received at El Paso between May 31st and June 14th; after the last mentioned date the mails and passengers were carried in wagons, around the extensive breaks. The street railway bridge across the Rio Grande at El Paso was washed away on the 9th. From the 25th to the close of the month the river fell steadily—a few inches per day."

Reports from Pena Blanca, Presidio county, Texas, on the 25th, stated that the water from the Rio Grande river was filling the grand cañons of San Carlos, San Vicente, and Rio Grande to a depth of more than three hundred feet. The water caused great destruction on the Mexican side of the Rio Grande at San Carlos. On the American side, in Presidio and Pecos counties, all of the natural reservoirs and mountain tanks were overflowed. On the tops of the highest mountain ranges the grass is reported to have been green and luxuriant, which is rarely witnessed in that country.

The valleys between El Paso and Fort Quitman were entirely overflowed on the 19th. Reports state that the village of Presidio, Presidio county, was nearly destroyed by the flood.

Yuma, Arizona: on the 9th the Colorado river began to overflow the adjacent low lands; reports from points along the Southern Pacific railroad, west of Yuma, stated that that road was badly washed. The river continued to rise at Yuma, and on the 24th, the river gauge was swept away; on the 28th a height of twenty-eight feet, four inches was attained, which is the highest stage shown by the records of the Signal Service. The observer states that while the river rose to a height fourteen inches above the high stage of March 11, 1884, no damage resulted, which was due to the recent construction of levees. The damage caused by the March flood referred to above was estimated at \$250,000.

Salt Lake City, Utah, 30th: the low grounds in the lower part of this city, which were flooded at the close of May, remained under water throughout June. No trains from Denver, via the Denver and Rio Grande railroad, reached this city during the last three weeks of the month on account of floods in southeastern Utah.

Sherlock, Finney county, Kansas: the Arkansas river overflowed its banks in some places on the morning of the 16th.

Under "local storms" will also be found reports of damage caused by the freshets resulting from the heavy rains accompanying storms described under that heading.

HIGH TIDES.

Eastport, Maine, 18th.
Barnegat City, New Jersey: 26th, very high tide, the water in the bay reaching an unprecedented height.
New River Inlet, North Carolina, 22d, 23d.